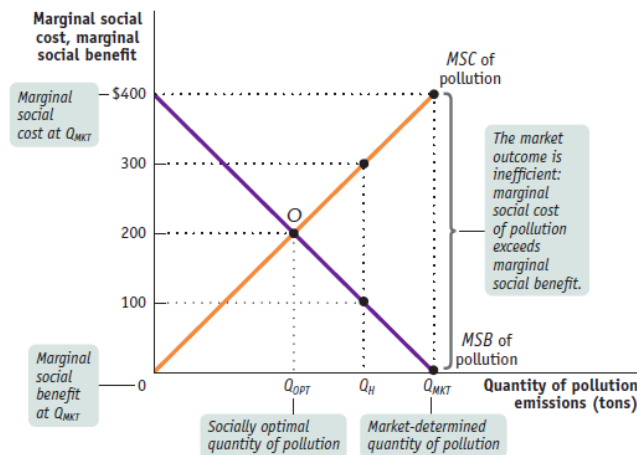


SECTION 14: Market Failure & the Role of Government

Need to Know:



The **socially optimal** quantity of pollution Q_{opt} is where **MSB=MSC**

Marginal Social Cost (MSC): the additional costs imposed on society as a result of one more unit of pollution. These costs include those borne mostly by humans (cancers, asthma, and other illnesses) or by nature (loss of species, degradation of water, soil, air or climate).

Marginal Social Benefit (MSB): the additional benefits received by society as a result of one more unit of pollution. Industries must use scarce resources (labor, capital, land) to install new technologies to prevent the pollution. These scarce resources have value (benefit) in alternative uses, so if we *don't* use them to prevent a ton of pollution and allow the ton of pollution to exist, we receive that benefit elsewhere in society.

External Cost – an uncompensated cost that an individual or firm imposes on others

Coase Theorem - so long as property rights are clearly defined, and transaction costs are minimal, a private solution can be found to a situation such as this.

In reality there might be situations where transaction costs are too high to make a private solution easy to negotiate:

1. High communication costs between affected parties.
2. High legal costs.
3. Costly delays involved in bargaining.

Economists have long known that if you want someone to do less of something, all you need to do is raise the price of doing it. Harness the power of the law of demand and the profit motive!

The government uses:

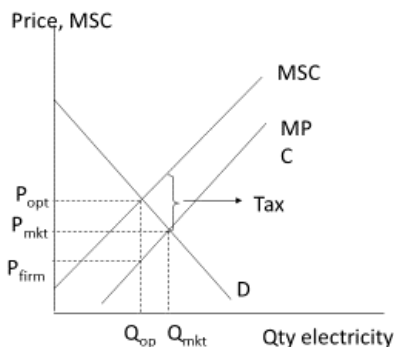
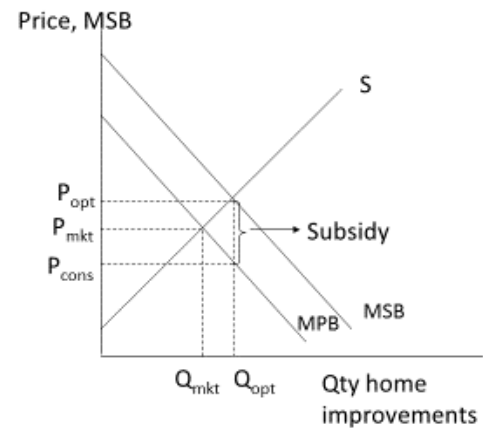
- Environmental Standards
- Emissions Taxes
- Tradable Emissions Permits

SECTION 14: Market Failure & the Role of Government

Total Social Benefit = Total Private Benefit + Total External Benefit

Marginal Social Benefit = Marginal Private Benefit + Marginal External Benefit (MSB = MPB + MEB)

- **Equilibrium** occurs where the supply curve intersects MPB (private demand) and Q_{mkt} is produced at price of P_{mkt} .
- **Socially optimal outcome:** If the external benefits are considered, the socially optimal outcome is where the supply curve intersects the MSB curve and Q_{opt} is produced at a price of P_{opt} . At this point the marginal cost of producing (from the supply curve) is equal to the marginal benefits society receives from consuming them.



Total Social Cost = Total Private Cost + Total External Cost

On an incremental basis, the next unit provides marginal social, marginal private, and marginal external costs.

Marginal Social Cost = Marginal Private Cost + Marginal External Cost (MSC = MPC + MEC)

A **network externality** exists when the value to an individual of a good or service depends on how many other people use the same good or service.

	Rival in consumption	Nonrival in consumption
Excludable	Private goods <ul style="list-style-type: none"> • Wheat • Bathroom fixtures 	Artificially scarce goods <ul style="list-style-type: none"> • Pay-per-view movies • Computer software
Non-excludable	Common resources <ul style="list-style-type: none"> • Clean water • Biodiversity 	Public goods <ul style="list-style-type: none"> • Public sanitation • National defense

Excludable: suppliers of the good can prevent people who don't pay from consuming it.
Rival in consumption: the same unit of the good cannot be consumed by more than one person at the same time.

The efficient level of public goods is the quantity where **MSC = MSB**

Price regulation can be designed as either **marginal-cost** or **average-cost pricing**.

- **Marginal-cost pricing:** $P=MC$, consistent with perfect competition and zero deadweight loss, but this might create economic losses for the firm. The government would need to subsidize these losses at taxpayer expense.
- **Average-cost pricing:** $P=ATC$. This outcome insures that the firm will earn normal economic profit, but will not be at the most efficient level of output (some deadweight loss will exist)